

First Year Module and Stream Choice Information

Now that you have made the grades for your offer at Nottingham you need to decide which stream (combination of subjects) you want to study. Your choices are somewhat restricted by the subjects you studied to A level/Higher Level and the grades that you obtained. The table below outlines the different combinations which are available and the requirements for them (please note if Maths is in the stream it is required at an B/HL6 or above)

STREAM	BIOLOGY	CHEMISTRY	MATHS OR FURTHER MATHS	PHYSICS	OTHER SCIENCE(S)
ARCHAEOLOGY, BIOLOGY, CHEMISTRY					
ARCHAEOLOGY, BIOLOGY, EARTH SCIENCE					
ARCHAEOLOGY, EARTH SCIENCE, CHEMISTRY					
BIOLOGY-ARCHAEOLOGY-ECOSYSTEM & ENVIRONMENT					
BIOLOGY, CHEMISTRY, MATHS					
BIOLOGY, PHYSICS, MATHS					
CANCER SCIENCE-BIOLOGY-PSYCHOLOGY					
CANCER SCIENCE-BIOLOGY-CHEMISTRY					
CHEMISTRY-ARCHAEOLOGY-ECOSYSTEM & ENVIRONMENT					
CHEMISTRY, EARTH SCIENCE, MATHS					
CHEMISTRY, PHYSICS, MATHS					
ECOSYSTEM & ENVIRONMENT, BIOLOGY, CHEMISTRY					
ECOSYSTEM & ENVIRONMENT, EARTH SCIENCE, ARCHAEOLOGY					2
ECOSYSTEM & ENVIRONMENT, EARTH SCIENCE, CHEMISTRY					
EARTH SCIENCE, BIOLOGY, CHEMISTRY					
EARTH SCIENCE, BIOLOGY, MATHS					
EARTH SCIENCE, ECOSYSTEM & ENVIRONMENT, BIOLOGY					
MATHS, PSYCHOLOGY, CHEMISTRY					
PHYSICS, EARTH SCIENCE, MATHS					
PHYSICS, PSYCHOLOGY, MATHS					
PSYCHOLOGY, BIOLOGY, CHEMISTRY					
PSYCHOLOGY, BIOLOGY, MATHS					

- Other Science includes Biology, Chemistry, Environmental Studies/Science, Geography, Geology, Maths, Physics or Psychology

Some of you may be certain about 2 subjects but less certain about the third subject (particularly if it is not a subject you have experience of studying). To help you to narrow this down please see the subject overviews to get a better idea of what you will be studying.

It is possible to change your stream once you arrive. This type of change can be made up the end of the third week - students are advised to attend lectures for multiple subjects if they are trying to decide between them to make sure they don't miss anything.

Subject Overviews

Archaeology – Archaeology is the study of the past based on material remains. On Natural Sciences you focus on techniques (for gathering and analysing remains), materials (glass and ceramics) and bioarchaeology (bones and fossils). Options in Y2,3 and 4 allow you to tailor what you study to your interests.

Biology – Biology is a vast subject so we have had to narrow it down to specific areas for Natural Sciences. Students choose a specialism to follow from the first year either molecular biology and genetics or evolutionary biology and ecology. Alongside compulsory elements students choose options from Y2 in immunobiology, neuroscience, animal behaviour, genetics or developmental biology.

Cancer Science – This is an interdisciplinary strand which brings together different areas of study around cancer. This includes the genetic and molecular side of how cancers are caused and spread through the body, the statistical elements of who gets cancer and what causes some people to be more susceptible and the treatment side of how cancer is treated and what the future of treatment may hold. Requires Biology to be taken alongside it in year 1.

Chemistry – In your first year you study all three branches of Chemistry; Inorganic, Organic and Physical including labs. From Y2 you focus on two branches (in some cases this may be dictated by the other subject you are studying). Optional modules are available in the third year in specialist areas of chemistry within each of the branches. Laboratory work is a standalone module in years 2 and 3 and takes up a large proportion of your time.

Ecosystem & Environment – This is a blended subject which incorporates module from Environmental Science and Geography. You start with a broad base covering systems which underpin global processes and environmental change and then use options to explore the areas that most interest you. The key areas of study in this subject are ecosystem management, biogeography, environmental change and modelling. Some modules involve field courses for which there may be additional costs.

Earth Science – This is a blended subject which incorporates modules from Environmental Science and Geography. You start with a broad base of geology, geomorphology and the changing planet alongside options. In later years explore what you are interested in such as geochemistry and the cycling of chemicals on the planet, management of freshwater sources, pollution and remediation or geological hazards and resources. Some modules involve field courses for which there may be additional costs.

Maths – The first year provides the foundation for different areas of study in later years including programming in Python. In Y2 students choose between specialisms of modelling, computation and applied statistics or mathematical physics (compulsory with Physics). The choice in Y2 impacts what modules are available in Y3 and 4.

Physics – The first year of Physics study provides the foundation for either a theoretical or an experimental route through physics in later years. Students on the theoretical route have options in Y2 which allow them to explore other areas such as nanoscience and astronomy. Students on the experimental route will begin labs in Y2 and complete an experimental project in Y3. Requires Maths to be taken alongside it in year 1.

Psychology – In the first year of Psychology you choose which one of two specialisms you wish to follow: biological/neuroscience or social/developmental route, and then continue with that in later years. You can explore your interests with optional modules in Y3.

Specialism/Module Choice

In addition to choosing streams some of you will also need to choose specialisms or options, these choices are detailed below. You will find information on all modules (compulsory and optional) in the Module Overview section.

Specialism and optional module choices are made using a form through the MyNottingham system and these will be made initially during the first week at University, there will be an event explaining both what choices you need to make and how to do this. The form will reopen when teaching starts in week 3 and there will be an option then for students to change modules if they decide once teaching starts that they want to take different modules or change stream.

Biology

Students choose between a Molecular Biology & Genetics Specialism or an Evolutionary Biology & Ecology Specialism in Y1.

	MOLECULAR BIOLOGY & GENETICS	EVOLUTIONARY BIOLOGY & ECOLOGY
Y1	GENES, MOLECULES AND CELLS (40)	LIFE ON EARTH (20) EVOLUTION, ECOLOGY AND BEHAVIOUR (20)
Y2	THE GENOME & HUMAN DISEASE (20) BACTERIAL GENES AND DEVELOPMENT (10) MICROBIAL BIOTECHNOLOGY (10) 20 CREDITS OF OPTIONS INFECTION AND IMMUNITY EVOLUTIONARY BIOLOGY OF ANIMALS & DEVELOPMENTAL BIOLOGY NEUROBIOLOGY OF DISEASE	ECOLOGY (20) THE GREEN PLANET (20) 20 CREDITS OF OPTIONS INFECTION AND IMMUNITY BUILDING BRAINS EVOLUTIONARY BIOLOGY OF ANIMALS & REPRODUCTIVE PHYSIOLOGY ANIMAL BEHAVIOUR & PHYSIOLOGY
Y3	GENE REGULATION (10) HUMAN VARIATION (10) MOLECULAR BIOLOGY LAB SKILLS (10) 20 CREDITS OF OPTIONS PATHOGENS CANCER BIOLOGY ADVANCED DEVELOPMENTAL BIOLOGY AGING, SEX AND DNA REPAIR MOLECULAR AND CELLULAR NEUROSCIENCE	EVOLUTIONARY ECOLOGY (10) CONSERVATION (20) 20 CREDITS OF OPTIONS PATHOGENS MOLECULAR AND CELLULAR NEUROSCIENCE MOLECULAR EVOLUTION SCIENCE & SOCIETY MOLECULAR BIOLOGICAL LAB SKILLS

Earth Science

Optional modules help provide foundations for specific themes. These are recommendations not required routes. There are also modules in the second which are more general techniques modules which are available to all: Techniques in Physical Geography.

Students pick 20c of options from 50 possible credits (in addition to below students can choose On Earth and Life which does not really follow on in this subject strand but fits well with Physical Landscapes of Britain).

Y1	GLOBAL ENVIRONMENTAL PROCESSES (20)	PHYSICAL LANDSCAPES OF BRITAIN (10)	INTRO TO GIS (10)
Y2	SOILS (10) ENVIRONMENTAL GEOCHEMISTRY (10) RIVER PROCESSES & DYNAMICS (20)	SEDIMENTOLOGY & PALAEOLOGY (20) RIVER PROCESSES & DYNAMICS (20)	SPATIAL DECISION MAKING (20) EARTH OBSERVATION (20) RIVER PROCESSES & DYNAMICS (20)
Y3	ENVIRONMENTAL POLLUTANTS (20) ENVIRONMENTAL POLLUTION FIELD COURSE (10) FRESHWATER MANAGEMENT (20)	MINERALOGY & PETROLOGY (20) GEOPHYSICS & GEOLOGICAL MAPPING (20) GEOLOGICAL HAZARDS AND RESOURCES (20) FRESHWATER MANAGEMENT (20) PALAEOBIOLOGY (10)	GEOSPATIAL TECHNOLOGIES: MOBILE, AUGMENTED, VIRTUAL (20)

Ecosystem & Environment

Optional modules define the themes you might study in later years. These are recommendations not required routes and no first year modules are prerequisites. There are also modules in the second and third year which are more general techniques modules which are available to all: in Y2 Computational Modelling, Fieldwork Skills, Techniques in Physical Geography, Environmental Management Field Course' in Y3 Computational Modelling 2 and Environmental Modelling.

Students pick 20c of options from 50 possible credits (in addition to below students can choose Physical Landscapes of Britain which does not really follow on in this subject but fits well with On Earth and Life).

Y1	THE ECOLOGY OF NATURAL & MANAGED ECOSYSTEMS (20)	CLIMATE ATMOSPHERE & OCEANS (10)	ON EARTH AND LIFE (10)
Y2	FOREST ECOLOGY & MANAGEMENT (20) ECOSYSTEM PROCESSES (20)	CLIMATE CHANGE SCIENCE (10) ENVIRONMENTAL CHANGE (20)	PATTERNS OF LIFE (20) ECOSYSTEM PROCESSES (20)
Y3	ECOSYSTEM FUNCTION AND CONSERVATION (10) ARCTIC ECOLOGY FIELD COURSE (10) ENVIRONMENTAL BIOTECHNOLOGY (10)	QUATERNARY ENVIRONMENTS (20) GLOBAL CLIMATE CHANGE (20) PALEOBIOLOGY (10) ARCTIC ECOLOGY FIELD COURSE (10)	EMERGING CHALLENGES IN BIOGEOGRAPHY (20) ARCTIC ECOLOGY FIELD COURSE (10)

Psychology

All students take Cognitive Psychology in Y1 and Y2 and students choose whether to study Social and Developmental or Biological/Neuroscience Psychology alongside this with their choice of specialism in Y1.

	SOCIAL AND DEVELOPMENTAL	BIOLOGICAL/NEUROSCIENCE
Y1	SOCIAL PSYCHOLOGY (10) DEVELOPMENTAL PSYCHOLOGY (10)	BIOLOGICAL PSYCHOLOGY (20)
Y2	SOCIAL AND DEVELOPMENTAL PSYCHOLOGY (20) CONCEPTUAL & HISTORICAL ISSUES (10) PERSONALITY & INDIVIDUAL DIFFERENCE (10)	NEUROSCIENCE AND BEHAVIOUR (20) RESEARCH METHODS AND ANALYSIS (20)
Y3	DEVELOPMENTAL DYSLEXIA (10) UNDERSTANDING DEVELOPMENTAL DISORDERS (10) <i>OPTION EDUCATIONAL PSYCHOLOGY (10)</i> <i>OPTION FORENSIC & MENTAL HEALTH (10)</i> <i>OPTION CLINICAL PSYCHOLOGY (10)</i> <i>OPTION: COGNITIVE DEVELOPMENT & AUTISM (10)</i> <i>OPTION: ALTRUISM, COOPERATION & HELPING (10)</i> <i>OPTION: SOCIAL NEUROSCIENCE RESEARCH</i>	THE VISUAL BRAIN (10) NEUROPSYCHOLOGY AND APPLIED NEUROIMAGING (10) NEUROPSYCHOLOGY OF ACTION (10) <i>OPTION ALTRUISM, COOPERATION & HELPING (10)</i> <i>OPTION: COGNITIVE DEVELOPMENT & AUTISM (10)</i> <i>OPTION SOCIAL NEUROSCIENCE RESEARCH (20)</i> <i>OPTION MECHANISMS OF LEARNING AND PSYCHOPATHOLOGY (20)</i>

Module Overviews

Archaeology

Module Title	Autumn	Spring
Understanding the Past I	20	
Understanding the Past II		20

UNDERSTANDING THE PAST I (CLAR1021)

Semester Taught: Autumn

Credits: 20

Style of Teaching: Lectures, Labs and Workshops

Module Convenor: Dr Will Bowden

Assessment (s): 100% Coursework (2,000 word Report)

Overview: Archaeologists are interested in all aspects of the human past, from ancient landscapes and changing environments, buried settlements and standing monuments and structures, to material objects and evidence for diet, trade, ritual and social life. This module provides a basic introduction to the discipline of archaeology, the process by which the material remains of the past are discovered, analysed and used to provide evidence for human societies from prehistory to the present day. Through this it will form a foundation for future student learning throughout the single and joint-honours degree programmes. It introduces the historical development of the subject, followed by an overview of current practice in the areas of archaeological prospection and survey, excavation and post-excavation analysis, relative and absolute dating, the study of archaeological artefacts, and frameworks of social interpretation. Focusing on methods of analysing remains of past societies, it will also introduce some of the basic principles of archaeological science, including the analysis of plant and faunal remains and the scientific analysis of materials such as metals, ceramics and glass, using both classroom and laboratory based sessions allowing students to gain hands-on experience with different types of materials.

UNDERSTANDING THE PAST II (CLAR1020)

Semester Taught: Spring

Credits: 20

Style of Teaching: Lectures, Fieldwork and Practical Workshops

Module Convenor: Dr Will Bowden

Assessment (s): 100% Coursework (Portfolio)

Overview: This module builds on the autumn semester module, Understanding the Past I, as an introduction to the core aims and methodologies of Archaeology as a discipline in providing a basic introduction to the process by which the material remains of the past are discovered, analysed and used to provide evidence for human societies from prehistory to the present day. Through lectures, classroom activities and practical fieldwork, students will be introduced to the study of landscape and the built environment, looking at how the archaeological record is both created and investigated. Students will be taken into the field to gain practical experience of core archaeological methods in field survey and buildings archaeology. By the end of the module, we aim to ensure that students will have developed a good understanding of the concepts used in archaeology, the questions asked and methods applied in investigating the evidence.

Biology

Molecular Biology and Genetics Specialism

Module Title	Autumn	Spring
Genes, Molecules and Cells	40	

GENES, MOLECULES AND CELLS (LIFE1029)

Semester Taught: Full Year

Credits: 40

Style of Teaching: Lectures and Lab Practicals

Module Convenor: Dr Alistair Chambers

Assessment (s): 40% Coursework (class tests based on practical work); 60% Exams

Overview: This module is designed to provide students with an understanding of the cell biology, biochemistry and molecular genetics of living organisms. Topics covered will include the structure and function of cells and organelles, structure of proteins and enzymes, structure of DNA, transcription, translation, mutations, basic recombinant DNA technology, organisation and control of genes in a diversity of organisms, metabolism of macromolecules, structure of cell membranes, transport processes, cell signalling and cell division. This module underpins more advanced biochemical and genetic modules in subsequent years. Practical sessions will illustrate the key principles covered in lectures as well as introduce some of the most important prokaryotic and eukaryotic model organisms used in genetic analysis.

Evolutionary Biology and Ecology Specialism

Module Title	Autumn	Spring
Life on Earth	20	
Evolution, Ecology and Behaviour	20	

LIFE ON EARTH (LIFE1030)

Semester Taught: Full Year

Credits: 20

Style of Teaching: Lectures and Lab Practicals

Module Convenor: Dr Thomas Hartman

Assessment (s): 50% Coursework (class tests based on practical work); 50% Exams

Overview: This module introduces students to the vast range of living (and many extinct) species to be found on Earth. The conditions for life will be discussed and whether these conditions may be found in other parts of the solar system. The various domains of life will be explored with due attention to the archaea and eubacteria and then detailed views of the eukaryotes. Issues of how they arose and how the process of endosymbiosis added much more complexity will be examined. Questions about the processes that drove the evolution of complexity and multicellularity, the development of mitosis, meiosis and the production of asymmetrical gametes will be considered. Within the context of the most recent phylogenetic trees the distribution of phyla will be examined in detail with the most complex groups, fungi, animals and plants being targeted for special consideration. The animal kingdom will be examined in detail looking at the relationships of many of the phyla and how this complexity arose. The course will emphasise our current understanding of biodiversity and how a simple morphological-based taxonomy has been shaken up by current molecular techniques. The module concentrates on the unity and diversity of life set in an evolutionary context and how the genotype gives rise to both phenotype and behaviour.

EVOLUTION, ECOLOGY AND BEHAVIOUR (LIFE1031)

Semester Taught: Full Year

Credits: 20

Style of Teaching: Lectures, Practicals and Workshops

Module Convenor: Dr Kate Durrant

Assessment (s): 48% Coursework (based on practical work); 52% Exams

Overview: This module provides an introduction to the fundamentals of evolution, ecology and behaviour. Evolutionary processes are explored from a variety of approaches, from the fossil record, through adaptation, speciation and the study of phylogenetics and how it shapes the tree of life, right up to the cutting edge of genomic evolution. Modern ecology has never been a more important subject than now, a result of our major environmental problems. In this module ecological topics are explored by examining ecosystem processes, competition, predation, pathogens, parasites and disease, life histories, resources, niches, demographic processes, and sustainability. Understanding animal behaviour in response to their ecosystem begins with asking rigorous questions about foraging, signalling, sexual selection, parental care, altruism and also allows us to understand human behaviour in an evolutionary context.

Cancer Science

Module Title	Autumn	Spring
Hallmarks of Cancer	20	
Causes and Consequences of Cancer		20

HALLMARKS OF CANCER (ONCG1001)

Semester Taught: Autumn

Credits: 20

Style of Teaching: Lectures, Practicals and Workshops

Module Convenor: Professor Kevin Gaston

Assessment (s): 30% In-Class Tests (based on practical work), 70% Exam

Overview: This module considers:

- The hallmarks of cancer and their importance
- Control of the cell cycle and cell cycle misregulation in cancer
- Oncogenes and tumour suppressor genes
- Genome instability and mutation
- The misregulation of cellular energetics in cancer
- The importance of the immune system in cancer

CAUSES AND CONSEQUENCES OF CANCER (ONCG1002)

Semester Taught: Spring

Credits: 20

Style of Teaching: Lectures, Practicals and Workshops

Module Convenor: Professor Kevin Gaston

Assessment (s): 10% Project, 20% Essay, 70% Exam

Overview: This module considers:

- The incidence and prevalence of cancer
- Epidemiology and the causes of cancer
- Cancer diagnosis (biochemistry, molecular biology, and histopathology)
- Cancer treatment (surgery, radiotherapy, and chemotherapy)
- Care for cancer patients (palliative care and recovery)

Chemistry

Module Title	Autumn	Spring
Fundamental Chemistry Theory and Practical	40	

FUNDAMENTAL CHEMISTRY: THEORY AND PRACTICAL (CHEM1020)

Semester Taught: Full Year

Credits: 40

Style of Teaching: Lectures, Lab Practicals, Workshops and Tutorials

Module Convenor: Dr Anna Bertram & Dr Kyle Galloway

Assessment (s): 35% Coursework (30% Practical Reports; 5% PeerWise Assessment); 65% Exams (x2)

Overview:

Inorganic: Atomic structure; Quantum numbers; Electronic configuration; Building the periodic table using theory; Periodicity; Chemical bonding; Lewis structures; Molecular shape and symmetry; Intermolecular interactions; Ligands and how they coordinate to metal centres; Bonding in transition metal complexes; Crystal field and molecular orbital theory; Geometries of complexes and isomerism; UV/vis spectroscopic and magnetic properties of octahedral, tetrahedral and square planar complexes; Reaction kinetics and thermodynamics; Trends in the properties of d-block element complexes.

Organic: Bonding, Structure and reactivity of organic molecules; Shapes and electronic properties of organic molecules; Classification of reactions and reaction components; Reaction mechanisms, 'Curly arrows', Nucleophilic substitution, Elimination reactions; Core carbonyl chemistry: Reactions and mechanisms; Chemistry of carboxylic acid derivatives: reactions and mechanisms; Functional group interconversions including redox chemistry; Synthesis using functional group interconversions and carbonyl chemistry.

Physical: Quantum theory; Bonding; Molecular orbitals; Vibrational and NMR spectroscopy; Intermolecular forces; Thermodynamics; Reaction kinetics; Electrochemistry.

Formative feedback is given on the theory in this module at the associated workshops and tutorials. Summative feedback is provided after the exam by the module staff.

Practical: This module introduces the essential qualitative and quantitative laboratory skills which are required in Inorganic, Organic and Physical chemistry. As well as performing experiments and collecting and using appropriate data, students will be required to produce written reports of their experimental work. Each laboratory component is a non-compensatable module element. In order to pass the module students must attain a mark of at least 40% in each laboratory component (i.e. inorganic laboratory practical, organic laboratory practical, physical laboratory practical).

Earth Science

Module Title	Autumn	Spring
Environmental Geoscience		20
Optional Modules 20 credits (one module) from the following:		
Global Environmental Processes	20	
Physical Landscapes of Britain	10	
Introduction to GIS		10
On Earth and Life		10

ENVIRONMENTAL GEOSCIENCE (BIOS1013) *Prerequisite for: Mineralogy & Petrology, Sedimentology & Palaeontology*

Semester Taught: Spring

Credits: 20

Style of Teaching: Lectures and Practicals

Module Convenor: Dr Barry Lomax

Assessment (s): TBC

Overview: Introduces basic geological skills, understanding and interpreting geological information, Knowledge of geology in the context of Ecosystem & Environment. Bulk properties of the Earth, Minerals, Igneous Rocks, Sedimentary Rocks, Metamorphic Rocks, Geological Time, Tectonics, Geological Structures, Map interpretation, Geological hazards, Resource Geology.

GLOBAL ENVIRONMENTAL PROCESSES (BIOS1004)

Semester Taught: Autumn

Credit: 20

Style of Teaching: Lectures

Module Convenor: Dr Liz Bailey

Assessment (s): 30% Coursework (Video Presentation), 70% Exam

Overview: The unifying theme of this module is biogeochemical cycling - the production, distribution and cycling of materials on the Earth and their availability to, and use by, biological organisms. The introduction covers the history of the universe, from the big bang to the evolution of the Earth's surface environment, via formation of galaxies, stars, elements and the solar system. Then we describe the major global systems and their circulations as they are today - solids (plate tectonics, formation and erosion of crustal rocks), liquids (oceans, temperature and salinity gradients) and gases (atmosphere, weather and climate). In the final section we examine the major materials - including carbon, nitrogen, sulphur, oxygen and metals - and their budgets and cycles; and the interactions between biological and physical/chemical processes on a global scale.

PHYSICAL LANDSCAPES OF BRITAIN (GEOL1001)

Prerequisite for: Mineralogy & Petrology

Semester Taught: Autumn

Credits: 10

Style of Teaching: Lectures and Practicals

Module Convenor: Dr Matt Jones

Assessment (s): 100% Exam

Overview: This module provides an understanding of the history and origins of the Earth and its life and landforms through consideration of the following topics using the British Isles as a case study:

- Tectonic History of Britain
- Environmental changes over geological time and associated rock types
- Geomorphology of typical British landscapes.

INTRODUCTION TO GEOGRAPHIC INFORMATION SCIENCES (GEOG1010)*Prerequisite for: Spatial Decision Making***Semester Taught:** Spring**Credits:** 10**Style of Teaching:** Lectures and Practicals**Module Convenor:** Dr Gary Priestnall**Assessment (s):** TBC

Overview: The module provides students with the theoretical background and practical training to undertake basic spatial analysis within a contemporary Geographic Information System (GIS). It is built upon a structured set of paired theory lectures and practical sessions, supported by detailed theory topics delivered via Moodle, which contain linkages to associated textbook resources. It aims to ensure competency in the use of a contemporary GIS software package whilst developing transferable ICT skills. It also encourages students to develop the analytical skills necessary for the creation of workflows that utilise the built-in analytical functionality of a GIS to solve a spatial problem.

Specific topics covered are:

- What is GIS?
- Cartographic principles behind GIS
- Spatial data models and database management systems
- Fundamental spatial analysis
- Presenting the results of GIS analysis

ON EARTH AND LIFE (GEOG1014)*Useful for Sedimentology and Palaeontology***Semester Taught:** Spring**Credits:** 10**Style of Teaching:** Lectures**Module Convenor:** Dr Richard Field**Assessment (s):** 100% Exam (1hr MCQ)

Overview: On Earth and Life is a ten-credit module that explores the deep historical co-evolution of Earth and Life and emphasizes uniqueness of place and historical contingency. The module leads on from and complements Physical Landscapes of Britain in exploring geological, plate tectonic and palaeoenvironmental ideas and research, but at the global scale. It emphasizes the role of life in creating past and present planetary environments, and conversely the role of environment and environmental change in the evolution and geography of life.

- How to do science when it focuses on the deep past
- The nature of geological evidence
- Early life on the young Earth
- Carbon cycling
- The Great Oxygenation Event
- Snowball Earth
- What molybdenum tells us
- Skeletons in the rocks
- Black Earth
- Warm-blooded vs cold-blooded
- The Great Dying
- Outliving *Tyrannosaurus rex*
- The geography of evolution
- Evolutionary hotspots
- Maori mystery
- Human origins

Ecosystem and Environment

Module Title	Autumn	Spring
Planet Earth: Exploring the Physical Environment	20	
Optional Modules 20 credits from the following:		
The Ecology of Natural and Managed Ecosystems	20	
Physical Landscapes of Britain	10	
Climate, Atmosphere and Oceans		10
On Earth and Life		10

PLANET EARTH: EXPLORING THE PHYSICAL ENVIRONMENT (GEOL1002)

Prerequisite for: Global Climate Change

Semester Taught: Full Year

Credits: 20

Style of Teaching: Lectures

Module Convenor: Dr Giles Foody

Assessment (s): 100% Exams (x2)

Overview: This module integrates knowledge of hydrological, geomorphological and ecological processes to inform an understanding of global systems and environmental change. The module considers:

- Principles of key systems such as the hydrological, fluvial and geomorphological
- Principles of biogeography and ecology
- Principles of environmental change and monitoring by remote sensing.

THE ECOLOGY OF NATURAL AND MANAGED SYSTEMS (BIOS1016)

Semester Taught: Autumn

Credits: 20

Style of Teaching: Lectures and Practicals

Module Convenor: Dr Helen West & Dr Ruth Blunt

Assessment (s): 50% Coursework & 50% Exam

Overview: The module covers: evolutionary aspects of ecology. Organisms and their environment: physical, chemical and biotic factors limiting species distribution; capture and utilization of resources by organisms; the niche concept; life cycles and dispersal. Population Ecology: intraspecific and interspecific competition; predation; parasitism and mutualism. Community Ecology: diversity and stability of communities; patterns of species richness; the concept of a climax community; energy flow and nutrient cycling. The module explores definitions of biodiversity and explores the value of biodiversity through different ethical frameworks. The loss of species and habitats is discussed with particular reference to semi natural and managed habitats such as woodland, hedgerows, meadows, and farmland.

PHYSICAL LANDSCAPES OF BRITAIN (GEOL1001)

Semester Taught: Autumn

Credits: 10

Style of Teaching: Lectures and Practicals

Module Convenor: Dr Matt Jones

Assessment (s): 100% Exam

Overview: This module provides an understanding of the history and origins of the Earth and its life and landforms through consideration of the following topics using the British Isles as a case study:

- Tectonic History of Britain
- Environmental changes over geological time and associated rock types
- Geomorphology of typical British landscapes.

CLIMATE, ATMOSPHERE AND OCEANS (BIOS1052)

Semester Taught: Spring

Credits: 10

Style of Teaching: Lectures, Practicals, Field Work & Seminars

Module Convenor: Dr Kamal Alskaf

Assessment (s): 100% Exam

Overview: Introduces key components of the Earth's circulation systems and how those contribute to determining the Earth's climate on regional scales. It provides an overview of weather formation, atmospheric and ocean chemistry, large scale ocean circulation patterns, and Earth's resulting climatic zones. Introduce concepts of climate and how that impacts on functioning of the Earth's ecosystems. Develop process based understanding practical as well as the spatial distribution of weather patterns and ocean currents. Using models and field measurements of air flow to test how energy is transported. Scale, rates, distribution and causes of weather systems and the implications of this for global climate change. We will examine the linkages between weather systems and ocean currents.

ON EARTH AND LIFE (GEOG1014)

Useful for Environmental Change and Patterns of Life

Semester Taught: Spring

Credits: 10

Style of Teaching: Lectures

Module Convenor: Dr Richard Field

Assessment (s): 100% Exam

Overview: On Earth and Life is a ten-credit module that explores the deep historical co-evolution of Earth and Life and emphasizes uniqueness of place and historical contingency. The module complements (but does not require) Physical Landscapes of Britain in exploring geological, plate tectonic and palaeoenvironmental ideas and research, but at the global scale. It emphasizes the role of life in creating past and present planetary environments, and conversely the role of environment and environmental change in the evolution and geography of life.

- How to do science when it focuses on the deep past
- The nature of geological evidence
- Early life on the young Earth
- Carbon cycling
- The Great Oxygenation Event
- Snowball Earth
- What molybdenum tells us
- Skeletons in the rocks
- Black Earth
- Warm-blooded vs cold-blooded
- The Great Dying
- Outliving *Tyrannosaurus rex*
- The geography of evolution
- Evolutionary hotspots
- Maori mystery
- Human origins

Mathematics

Module Title	Autumn	Spring
Calculus and Linear Algebra	40	

CALCULUS AND LINEAR ALGEBRA (MATH1019)

Semester Taught: Full Year

Credits: 40

Style of Teaching: Lectures, Workshops, Computing Workshops and Tutorials

Module Convenor: Dr R Symonds

Assessment (s): 25% Coursework (mix of problem based and computing courseworks); 75% Exams (x2)

Overview: The course consolidates core GCE mathematical topics in the differential and integral calculus of a function of single variable and used to solve some classes of differential equations. Basic theory is extended to more advanced topics in the calculus of several variables. In addition, the basic concepts of complex numbers, vector and matrix algebra are established and extended to provide an introduction to vector spaces. Students are introduced to different types of proof, such as direct proof, proof by contradiction and proof by induction, as well as theorems and tests for determining the limits of sequences and series. An emphasis in the course is to develop general skills and confidence in applying the methods of calculus and developing techniques and ideas that are widely applicable and used in subsequent modules. Students will be use a computer package to plot graphs and implement basic algorithms.

Major topics include:

- Differential and integral calculus of a single variable;
- Differential equations;
- Differential calculus of several variables;
- Multiple integrals;
- Complex numbers;
- Matrix algebra;
- Vector algebra and vector spaces;
- Logic and proof;
- Limits of sequences;
- Limits of series;
- Use of a computer package.

Physics

Module Title	Autumn	Spring
From Newton to Einstein	40	

FROM NEWTON TO EINSTEIN (PHYS1001)

Semester Taught: Full Year

Credits: 40

Style of Teaching: Lectures and Tutorials

Module Convenor: Dr R Hill

Assessment (s): 20% Continuous Assessment (Portfolio of task sheets), 80% Exams (x2)

Overview: This module is based on the textbook "Physics for Scientists and Engineers" by Knight (all first years are provided with a copy of this book). The module aims to introduce core topics in physics which will underpin all subsequent physics modules. The module begins by discussing classical mechanics in the language of vectors and the key notion of harmonic motion which is extended to cover wave phenomena. The first semester ends with an introduction to Einstein's special theory of relativity. The second semester introduces the basic ideas of electromagnetism and electrical circuits and quantum physics.

- Vectors and Coordinate systems
- Kinematics and Motion in 1D and 2D
- Newton's Laws
- Conservation Laws
- Rotation of a Rigid Body
- Micro-macro connection
- Oscillations
- Travelling Waves
- Superposition of Waves
- Galilean Relativity
- Relativity of Time
- Spacetime
- Relativistic Energy and Momentum

Psychology

Biological/Neuroscience Specialism

Module Title	Autumn	Spring
Cognitive Psychology	20	
Biological Psychology	20	

COGNITIVE PSYCHOLOGY (PSGY1002)

Semester Taught: Autumn

Credits: 20

Style of Teaching: Lectures and Workshops (details on moodle)

Module Convenor: Dr Neil Roach

Assessment (s): 25% Essay, 75% Exam

Overview: Cognitive psychology is the study of mental processes: the ways in which we gain information from the world, how that information is represented and transformed as knowledge, how it is sorted and how it is used to direct our attention and behaviour. This is our ability to perceive, comprehend, attend, store and retrieve information gained from the world. This module will introduce the methods used to investigate cognitive processes, together with summaries of principal findings in the domains of attention, perception, language, memory and thinking.

BIOLOGICAL PSYCHOLOGY (PSGY1003)

Semester Taught: Spring

Credits: 20

Style of Teaching: Lectures and Workshops (details on moodle)

Module Convenor: Dr Emma Whitt

Assessment (s): 25% Essay; 75% Exam

Overview: Biological psychology encompasses physiological, anatomical and genetic processes as a way of understanding psychology. This module provides core knowledge about basic biological facts (anatomy, physiology, neuropsychology, genetics and evolution) before covering their involvement in both typical psychological processes and in psychological disorders (e.g., amnesia, visual agnosia, narcolepsy, obesity, Balint's syndrome, and schizophrenia).

Social and Developmental Specialism

Module Title	Autumn	Spring
Cognitive Psychology	20	
Developmental Psychology	10	
Social Psychology		10

COGNITIVE PSYCHOLOGY (PSGY1002)

Semester Taught: Autumn

Credits: 20

Style of Teaching: Lectures and Workshops (details on moodle)

Module Convenor: Dr Neil Roach

Assessment (s): 25% Essay, 75% Exam

Overview: Cognitive psychology is the study of mental processes: the ways in which we gain information from the world, how that information is represented and transformed as knowledge, how it is sorted and how it is used to direct our attention and behaviour. This is our ability to perceive, comprehend, attend, store and retrieve information gained from the world. This module will introduce the methods used to investigate cognitive processes, together with summaries of principal findings in the domains of attention, perception, language, memory and thinking.

DEVELOPMENTAL PSYCHOLOGY (PSGY1006)

Semester Taught: Autumn

Credits: 10

Style of Teaching: Lectures and Workshops (details on moodle)

Module Convenor: Angeliki Makra & Dr Lauren Marsh

Assessment (s): 25% Essay; 75% Exam

Overview: This module introduces students to the fascinating world of the developing child. Lectures consider different theoretical, applied and experimental approaches to cognitive, linguistic and social developmental from early to late childhood. Topics include the development of thinking, perception, drawing, understanding the mind, intelligence, attachment, language, and moral development.

SOCIAL PSYCHOLOGY (PSGY1007)

Semester Taught: Spring

Credits: 10

Style of Teaching: Lectures and Workshops (details on moodle)

Module Convenor: Dr Stephanie McDonald

Assessment (s): 100% Exam

Overview: This module introduces students to the core topics in social psychology. Social psychology is concerned with trying to understand the social behaviour of individuals in terms of both internal characteristics of the person (e.g. cognitive mental processes) and external influences (the social environment). Lectures will cover topics on how we define the self, attitudes, attribution, obedience, aggression, pro-social behaviour and formation of friendships.

Online Incoming Students Stream Choice Form

There is an online form to select your choice of stream, there is a link in this in the Welcome Email you have received or it can be found online at: <https://forms.office.com/r/8zAwDZki4j>

When you fill in the online form it will ask you for details to match up to your record and about any dietary or access requirements you might have. It then asks the subjects studied at A level/Higher Level so it can take you through to a list of streams specific to your individual entry requirements to select your preferred stream.

The image shows two screenshots of a web form titled "New student stream choice form". The top screenshot shows the initial registration questions:

- Header: "New student stream choice form" with a subtitle "Form for selecting which combination of subjects you want to study".
- Section: "* Required".
- Question 1: "1. What is your name? *" with a text input field containing "Enter your answer".
- Question 2: "2. What is your email address? *" with a text input field containing "Enter your answer".
- Question 3: "3. What is your date of birth? *" with a text input field containing "Enter your answer".

The bottom screenshot shows the stream selection section:

- Header: "New student stream choice form".
- Section: "* Required".
- Selected Stream: "Biology-Chemistry-Maths-Physics" with a small icon.
- Text: "Streams available to students who studied Biology, Chemistry, Physics and Maths/Further Maths (A or above) to A/Higher Level".
- Question 9: "9. Please select the streams you would be interested in studying *".
- List of 20 radio button options for stream combinations, including "Archaeology-Biology-Chemistry", "Biology-Chemistry-Maths", "Earth Science-Biology-Chemistry", etc.

Please submit your responses by 5pm on the **3rd of September 2021**.

After this date if you want to make any changes please email kate.tape@nottingham.ac.uk or let us know when you arrive (if it is a stream change please email me as this might impact who your Personal Tutor or Peer Mentors are).

If you have any problems with the form please email kate.tape@nottingham.ac.uk.